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ORIGINAL ARTICLES

TREATMENT OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM.*

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In presenting a paper on a subject about which so much literature has recently appeared, and on which I have nothing original to offer, I have in view two purposes: First, to show the efficiency of late methods of treatment in cases which were formerly considered as hopeless, and thereby stimulate an interest in the profession toward reclaiming the paretics and tabetics; and secondly, to emphasize the importance of an early diagnosis of luetic infections of the central nervous system so that treatment can be initiated before too much damage is done for repair.

Sometime after the spirochætes were discovered in the brains of the victims of paresis and tabes, and these diseases were no longer considered as metasyphilitic or parasyphilitic, but as syphilis *per se*, a number of treatments were originated, all of which were antisyphilitic in their character and intensive in their course. In a way, all of these methods of treatment were futile even though they were antisyphilitic. This brought about considerable study, which revealed the fact to some experimenters that medical agents, whether given internally, intramuscularly or intravenously, did not find their way to the seat of the trouble in the brain or spinal cord, as there was apparently no connection between the blood circulation and the cerebrospinal fluid, and that no medicinal agents reached the cerebrospinal fluid from the blood in sufficient quantity to have any effect. It was further learned that the barrier between the blood circulation and the cerebrospinal fluid was the meninges, and especially the choroid plexus, which guard the openings to all the ventricles of the brain and to the spinal canal, and prevent the admission into it of medicinal agents or even antibodies, with the exception of hexamethylenamine and chloroform. This fact having been learned, the workers continued their search for a method of reaching the seat of the trouble, and in this way the intraspinous route of medication was found and opened up.

Numerous drugs and various medicinal agents were administered intraspinously for the treatment of syphilis of the central nervous system, such as cyanide of mercury in salt solution and minimum doses of salvarsan. For one reason or another all of these treatments were unsatisfactory and in many instances very harmful to the patient.

Finally, Swift and Ellis, of the Rockefeller Institute, devised a treatment which is very efficacious and is in a way the standard treatment of all forms of this trouble. Much has recently been published on this subject and the Swift-Ellis treatment of syphilis of the central nervous system is fairly well known, but for the purpose of bringing out a few points I will reiterate briefly the salient features of their method.

Salvarsan is administered intravenously, weekly, in 0.6 or 0.9 gm. doses. Twenty minutes after each administration, at which time the salvarsan content of the blood is supposed to be at the highest point, 50 c. c. of blood is drawn off through a large caliber needle. This is placed on ice and kept over night and on the following morning when the clear serum is separated from the clot, diluted to a 40 per cent solution with normal saline, and after the spinal canal has been tapped

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and the fluid has been allowed to run until the flow has ceased and the fluid comes in drops, the solution of serum is allowed to run by gravity into the spinal canal, after which the patient is immediately put to bed with feet elevated so that the injected solution will gravitate to the cerebrum. By a series of experiments it has been learned that beyond a doubt this solution does reach the cortex of the brain. This treatment is repeated for four to ten weeks according to the reaction of the patient, and according to the changes in the globulin content and cell count in the spinal fluid.

With some modifications this method of treatment has been followed at the state hospital since it was made public by the authors in 1914. Other treatments, such as the injection of bichloride of mercury in serum, directly into the spinal canal, have been tried, but the results clinically and serologically have not been as good as the salvarsanized serum, as will be borne out by the laboratory records which we have on file at the hospital.

In 1916 I reported a series of four cases treated in this way, two of which were cerebrospinal syphilis and in young men, and two of paresis in men between forty and fifty years of age. With the exception of one of the paretics all of these cases were improved to such an extent that they went home and are there now. The one paretic who did not show improvement suffered a typical paretic decline and died about a year after the treatment was finished. The second case of paresis, who was allowed to go home in charge of his wife, has had no relapse and is now earning his living doing work of a simple nature. He has never been able to resume the position in the business world which he formerly occupied, but is doing carpenter work and chores of various kind, and socially is very happy. At the time of his admission to the hospital he displayed the classical symptoms of paresis physically, neurologically and mentally. He was in an exalted and confused mental state and entertained grandiose ideas regarding his own importance. This exaltation and confusion advanced until he became so excited that he was placed on the ward where the most violent cases are kept. The cell count at this time was 20 per cmm.; Wassermann of both blood and spinal fluid was positive, and the globulin content was excessive. He was placed on specific treatment and did not show any improvement, but began to deteriorate physically, as is typical of paretics, until he became so demented and debilitated that he was placed on the nursery ward, where he required the same care as a baby.

The Swift-Ellis treatment was started on the first of March of that year. No improvement, however, was shown until the four treatments had been given, when he began to brighten up and notice things, and improvement continued until he left the hospital in the custody of his wife in the following November, at which time the pupillary and patella reflexes were about normal. There was no muscular incoordination or speech disturbances, and his serology showed a cell count of 5 per cmm., with no excessive globulin content. His wife reported his condition to us at frequent intervals for a long time after he was discharged, and the only mental abnormalities he has shown is childishness and a slight irritability.

In the other two young men the syphilis had not advanced to such a great extent as the spirochætes had evidently not permeated to the parenchyma of the brain. In one there had been a stroke of paralysis which had cleared up, but left him confused and disoriented to some extent. He gave a negative Wassermann of blood and positive Wassermann of the spinal fluid, cell count 200 per cmm., and globulin in excess. After the Swift-Ellis treatment had been completed, his spinal fluid gave a negative Wassermann, the cell count was diminished to 15 per cmm., and the patient left the hospital about six months after admission. This case was doubtless one of cerebral syphilitic endarteritis with mild meningeal involvement, as shown by the high cell count, and would have become a case of paresis if allowed to advance.

In the other case the syphilitic infection of the brain was still in the cortex, and while the patient had been in the hospital for some six months previous to treatment, his recovery was uneventful after the Swift-Ellis treatment was administered, and he left the hospital with a negative serology. This patient has been returned to the hospital twice since that date, but each stay has been very short and the spinal fluid findings have been negative. He was merely in a state of depression mentally, which psychosis was not due to any pathology of syphilis.

The next case is one in whom the treatment was finished in March of last year, and which I merely report because of his arrested condition, which is remarkable from the fact that the patient was in such an advanced state of general paralysis that his intestinal tract and bladder were affected and he had suffered a complete loss of insight and judgment with no memory for present or past events, and was in a state of absolute confusion. There were altogether sixteen treatments of salvarsanized blood serum administered to him. When treatment was started with him his cell count was 144 per cmm.; Wassermann of blood and spinal fluid, four plus, and the globulin content was excessive. The serology gradually improved until now he gives a cell count of 10 per cmm., and no excessive globulin content but a mild Wassermann of the spinal fluid. Clinically, he has improved to the extent that he does not have any further incontinence of urine and feces and has gained 20 pounds. Mentally, he has shown some improvement, but in this we do not hope for much because the brain tissue which has been permanently damaged can not be replaced.

A new method of treatment, which is indeed very promising, has recently been advanced by J. Henry Barbat, of San Francisco, Cal., who has recently made a report on a number of cases treated by this method. While the principle of the treatment is the same as the Swift-Ellis—that is of getting directly into the cerebrospinal canal the salvarsan or arsenic—the method is different and is based on the permeability of the meninges under certain conditions, and on the fact that the source of the cerebrospinal fluid is in the choroid plexus, and possibly the ependymal cells. He believes that the meninges are permeable to medicinal agents, or especially to salvarsan, if at the time the blood content of this substance is high, as after intravenous injection all of the spinal fluid is removed by tapping the spinal canal; that since there is no counter-pressure in the spinal canal, the blood serum permeates the meninges and carries the arsenic with it, or it deposits the arsenic in the meninges from which the spinal fluid is derived, and that the newly formed fluid is loaded with arsenic.

Working on this hypothesis he removes all of the spinal fluid twenty minutes after the intravenous injection of salvarsan. This spinal fluid is caught in two portions, the last of which is caught when the interval between drops begins to be lengthened. Arsenic is recovered in the last portion of this spinal fluid in about 25 per cent of the cases. Of twenty-six cases treated in this way he recovered arsenic in the spinal fluid obtained from 25 cases, twenty-four hours after injection. This method has also been followed out at the hospital in a number of cases since the report was made by Dr. Barbat in January. All of these cases have shown physical improvement and in some there has been an improvement serologically and mentally.

The treatment has not been under way long enough to have obtained any positive results, but I have selected for the purpose of this paper only two cases of advanced paresis out of a large number we have on file to show there has been a gradual improvement. In each case treatments were given at the same time and four treatments in all have been administered. In one on March 27th the cell count was 49 per cmm., and the globulin content excessive; the next treatment given April 3d the cell count was 46, globulin excessive; the next dose on April 17th, cell count 11, globulin reduced; May 1st, cell count 1 or normal, globulin reaction

negative. The other case received the first treatment on March 27th, cell count 136, globulin excessive; on April 3d, cell count 76, globulin reduced; April 17th, cell count 33, globulin still reduced; May 1st, cell count 5 or normal, globulin reaction negative. Both were cases of advanced paresis. The effect of the withdrawal of all of the spinal fluid has not at any time been marked, and the headache following is frequently not as bad as that which attends the withdrawal of only a small quantity of spinal fluid.

Conclusion.

In reviewing this work and summarizing the results, the following conclusions have been reached: That if cases of cerebrospinal syphilis can be received and treatment started before there has been tissue destroyed or any irreparable damage done to the brain, and while the infection is still in the meninges, and near the surface which is in reach of the spinal fluid, the prognosis with either of the treatments which I have outlined is fairly good. I selected one case for this paper of advanced paresis in which the disease had been checked and the patient improved physically; the mentality had gotten into an arrested state but not improved, as we can not hope to repair damage to brain tissue which has been affected by this degenerative disease.

In those cases where the infection has reached the parenchyma of the brain, and where the spirochætes are beyond the reach of the cerebrospinal fluid the prognosis is bad. In cases that have apparently recovered there may be at some point in the brain some syphilitic process which nature has in a compensatory effort walled off so that the contents are protected from the spinal fluid which contains arsenic and other medicinal agents, and at some time this wall may break down and set free into the brain a large number of spirochætes. For this reason it is advisable that patients who have once been affected with cerebrospinal syphilis have a Wassermann and cell count of the spinal fluid made at intervals of every six months, and treatment should be repeated if the findings are positive.

The advanced cases, however, are worthy of a trial, and if the process is not too deeply hidden some improvement can at least be hoped for. At any rate for cases of this nature this is a most rational and the only treatment.

COLONY CARE FOR THE EPILEPTIC AND FEEBLE-MINDED OF FLORIDA.*

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The epileptic and feeble-minded have much in common. Nearly all epileptics are feeble-minded, becoming more and more so as they grow older, the exception being the small percentage that, under proper surroundings and treatment, react in some way and have the seizures less often, less severe, or a cessation of them. Those whose mentality, properly tested, shows retardation of three years, or a difference of three years between their age and mental growth, under circumstances favorable to normal development, or grown persons having mentality equal to that of a normal child of ten years, are termed feeble-minded. In the matter of care and treatment they may consistently be considered together.

Believing that the welfare of this class of patients already has the attention of every progressive medical man, and actuated by a desire to stimulate a fuller consideration of modern methods of handling such defectives in our state, I present this paper instead of one more strictly medical.

Careful study of the epileptic and feeble-minded shows that in common they (1) lack self-control, and for this reason yield easily to temptation; (2) usually fail to earn an independent living and drift easily into immorality and crime; (3) often become objects of charity and state wards; (4) transmit their defects from parent to child; (5)

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have an unusually high birth rate among them in the absence of proper moral guidance, complicating every social problem; (6) seldom if ever become normal; (7) require individual training in which hand—not head—work must be emphasized; (8) both need proper institutional care.

Since the right method of caring for them eventually costs less than neglect, and at the same time assures to them the privilege of living happier lives, many of them useful lives, the well-being of these unfortunate ones becomes a medical problem, meriting our careful consideration.

Taking the lowest figures mentioned there are two epileptics and three feeble-minded persons to each thousand. This would give Florida a little less than 5,000 such defectives. Of these fully 1,000 are women of child-bearing age. At least 1,200 are indigent and supported by city, county or state.

More than half of the states in the union have made appropriate provisions for the indigent epileptic population within their borders, and only sixteen remain that have not provided the necessary facilities to care for and train their feeble-minded. Florida does not have the distinction of being on the honor roll in either count, only to the extent that if either of these two classes show distinct tendencies to crime, they are convicted of crime, or are committed as insane; they have such custodial care as our state is able to give at the institutions at Ocala, Marianna and Chattahoochee.

On May 1, 1918, there were at the Florida Hospital for the Insane 148 epileptics and 163 feeble-minded patients (not including idiots). They are getting the best treatment that the crowded conditions will permit, but why should they be kept there when they can be cared for at less expense in an institution especially suited to their needs? Should they not have the same consideration, chance and opportunity for training as our deaf, dumb and blind? It is evident that those of our state who are interested in these patients are beginning to ask such questions and plan for improvement for them. In 1915 a commission was created by the Legislature of Florida to investigate the need of an institution for the indigent epileptic and feeble-minded. So much information was obtained as a result of the investigation inaugurated by the commission, that a partial report was made in 1917 and the Legislature of that year continued the work and membership of the commission that it might complete the important duty assigned and report in full in 1919. The Women's Clubs are asking for facts and figures regarding this subject, representative citizens and business men are no longer considering the proposition a visionary scheme but a modern necessity.

The state officials, composing the Board of Commissioners of State Institutions, stand ready to do their part to relieve this situation, but must wait for the sanction of the Legislature as the legislative body makes the appropriations. The Legislature will make the necessary provisions when a sufficiently large number of the citizens of Florida interest themselves enough to impress upon the individual member the benefits of this system both to these patients and to the state at large.

One great writer and student of the subject of epilepsy has stated: [1] "Strangely enough, the same agents which are so beneficial in combating tuberculosis are of the greatest benefit in these cases. Work in the fresh air and good, wholesome, and carefully chosen food are better than medicine. Colonies with their large farms provide this to advantage and are thoroughly proven to be the most satisfactory method of treating and caring for this disease"; and the one society of the United States doing most to stimulate public interest in behalf of the feeble-minded says in one of several bulletins: [2] "Any plan for the care of such a large number of people must first be reasonably economical. It must be effective. It must prove satisfactory to parents and

[1] William C. Graves, Public and Private Care of Epileptics in the United States and Canada, December 31, 1914.

[2] Bulletin No. 2, Committee on Provision for the Feeble-minded, 1917.

guardians as well as to the public generally. It must be capable of early application. * * In the hospitals for the insane, the feeble-minded and epileptics are adding to the already overcrowded condition. They do not need the care of the expert physician and the expensive protected buildings — they want mothering, directing and the opportunity of the land. They need a job, with material found with which to work, instruction as to what to do, a place to perform labor, someone to take care of the product, and encouragement—and they are useful and happy."

In considering a colony plan the first item should be plenty of the right kind of land. There should not be less than 300 acres for 500 patients, and an acre for each person has been designated by some as the minimum. Great care in the selection of a location is vital. The tract selected for the most part should be woodland. It should be high, well-drained, healthy and well-watered by springs or stream, with several grades and varieties of soil, some for general farming, some for trucking, and some for pasture. The colony should be located not far from some important town so that supplies may be received and produce shipped without delay, and relatives may visit conveniently. The middle peninsular portion of the state seems preferable as a location on account of the advantages of the climate and the low cost of keeping the colonists warm in the winter.

After the location for the buildings has been selected, the boys who are to form the nucleus of the colony, and are able to work, should go into camp, properly supervised, and clear up and get in readiness the grounds before the carpenters come to build. When everything is in readiness to begin building, the boys can begin clearing the farm. The work of helping make a new home will be fun for them.

Plenty of ground should be set apart for the proper development of the colony to prevent crowding in the future, it matters not how the numbers increase. In the laying out of the ground no natural advantage of the location should be overlooked that would make it a beautiful, healthful, happy place to live.

The cottages to be used as homes for the patients may be frame or cement-block bungalows. They should be one-story, screened, well lighted, and modern in every particular. Each cottage should accommodate thirty-five to fifty, a feature of each being sheds or porches that will permit sleeping out in the open. Groups of buildings as homes for each race and sex should form units of the colony and be sufficiently widely separated to give the greatest freedom and prevent crowding as the colony grows. Correct arrangement of these four groups should have them not too far from the hospital, administrative office, chapel, and amusement hall; such buildings to occupy a position as nearly central as possible and equally accessible to all. Instead of four hospitals there should be one hospital with wards for the care of each race and sex. The buildings already mentioned, plus wide streets and shady parks, will make a good beginning for the colony.

Then in their rightful places should be located the dairy, the barns, the piggery, light, power and water plants, storage houses, shop and other industrial buildings, the store, kindergarten and colony playground.

The officers' cottages and employees' dormitories should occupy positions as near the entrance to the grounds and as far from the patients' homes as is possible so that their resting hours may be in every way a change from the scene of the arduous hours on duty.

The farm and garden, gradually developed, will become the life and backbone of the colony, furnishing at the same time proper use of nature's wonderful tonics, sunshine, exercise and pure fresh air, that mean so much to these unfortunate sons and daughters of Florida.

The foregoing are only a few of the many points equally applicable and important in making plans for the colony, the details of which may be more fully worked out when such provisions become an actuality.

The need and advantages of such a plan for handling the classes mentioned above may be summarized as follows: It would (a) lessen the cost of maintenance, on account of less expensive buildings and a reduction in the nursing force; (b) provide facilities for training the patients to do many things with their hands that are not only a genuine pleasure to them but profitable. A vast deal of work toward maintaining a colony can be done by the patients; (c) create a home atmosphere for those whose malady denies to them the blessings of real home life, and eliminate the embarrassment that constantly complicates the situation on the outside; (d) remove this class of patients from the hospital for the insane to form the beginning of the colony and relieve the crowded conditions, possibly avoiding the necessity of the proposed additional institution for the insane for many years; (e) serve to train and make useful a large number of Florida's children not in any institution and for whom no educational provision has been made; (f) give opportunity for many, now objects of charity, to at least become partially self-sustaining; (g) provide the proper moral guidance and protection to prevent such as have immoral tendencies from drifting into crime and shame; (h) prevent and check epilepsy and feeble-mindedness in future generations by preventing parenthood so far as they are concerned, and thus cut off at its source at least three-fourths of the suffering and expense chargeable to these disorders in our state.

RELATION OF THE MEDICAL PROFESSION TO EACH OTHER AND TO THE PUBLIC.*

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Medical science is today in the greatest transitional period the world has ever known. Change, progress and new developments demand prompt attention. The advances in the lifetime of some of the members of the profession now living have been greater than in all the history of the world before. The medical profession of today is facing world problems the like of which was never known. Medicine is no longer provincial but world-wide in its domain and relations, and if the profession fails to conceive and recognize this extended field of duty and usefulness it will fail to live up to past traditions.

The advances in hygiene, sanitation, preventive medicine and war surgery in the present conflict is almost beyond conception, and when the conflict is over the future will call for constructive, united, cooperative work. The day is fast passing when a physician can stand alone and not recognize his duty to his fellow practitioner and to humanity. Those that enter the war will come home with broader conceptions and better qualified for life's duties and professional work.

Never in the history of the world has there been a better, purer, nobler soldiery developed than the American soldier of today, and if the same principles had been applied in the development of the American citizen from infancy up to the age of 21 we would have the strongest nation on the face of the globe today. Never before has the moral element been so emphasized in the physical development and fitness of a soldier as in the American soldier at the present time. The public and the medical profession are now just beginning to recognize the basic principles of moral science in the physical development of the human race and a high-class efficient soldiery.

In the past a blind fanaticism and a supposed principle of liberty — "to do as one pleased" — has beclouded the vision, destroyed physical fitness, degenerated the race, added untold and incalculable physical and financial burdens on the American citizen, lessening our fitness for the present crisis. The war has given the American nation a shock and awakened the American

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citizen and American physician as never before.

Never in the history of any nation has there been such moral leaders as are directing and leading the war forces of America today. Must I say the medical profession is having an object lesson forced upon them by the action of the military authorities in preventing venereal diseases and preventing the drinking of alcoholic beverages by the soldiers, thereby materially lessening crime, vice and disease. It has taken man centuries to overcome prejudice and even begin to recognize the effect of moral science in the physical development and fitness of the human race. That great monster, so-called "human liberty," has killed its millions and it has taken a diabolical reign of German "Kultur" to awaken the American people to a truer conception of human liberty. America has the opportunity today to lead the world in demonstrating the true principles of human liberty.

The President has sounded the keynote of national liberty and purity, the army and navy have established high standards of moral purity and fitness for duty. Now will the American citizen and the medical profession do their duty and sanction, sustain and support that which leads to a true liberty, which will uplift, upbuild and improve the race of mankind the world over? We have been groveling in the mire and filth of supposed liberty long enough to wake up to the fact that *absolute liberty demands absolute purity.*

We abhor and detest "German Kultur," while in the past we embraced so-called human liberty, in the form of venereal diseases, alcoholic beverages, and immoral practices and allowed it to fasten its fangs in the lives of innocent children, destroy young manhood and womanhood, weaken the American citizen, lessen the vitality of the American soldier and render us less efficient as a nation in our power to destroy "German Kultur." Yet we have with us American citizens who now advocate the further manufacture and sale of alcoholic beverages to further weaken us as citizens, weaken and destroy the efficiency of our soldiers. What could be more pro-German? If this war can destroy both, "German Kultur" and so-called "human liberty," making the world indeed and in truth free, then the war will not have been in vain.

The medical profession has disintegrating factors within its own ranks that must be corrected if we retain the respect, confidence and cooperation of the public, without which medicine of the future can not advance as the times demand. The incompetent must become competent or take a back seat. The state must take advance steps in medical legislation, and the State Medical Association should be the main factor in shaping that legislation. Legislation is needed to eliminate the unfit in the profession, also to secure efficiency in sanitation and preventive medicine. We should eliminate the unscrupulous practitioner from our midst, foster and sustain cooperative work. In this day no one can be efficient in all lines of work, one must depend on others for cooperative diagnosis for efficient work, which means closer professional relations and greater confidence in each other. This will call for a high morale of the medical profession, honest, square, upright dealing with each other, patients and the public not only in private practice but in civic, community, state and national work. We can not secure such cooperation and support by petty jealousies, contention and strife in our ranks, by commercializing the profession, by bartering and trafficking our patients at so much per head or on commission when we are dealing with suffering humanity at a time that should demand that which is highest, noblest and best in the profession. Human life is too sacred, the honor of the profession among true men too high to condone or endorse such actions. He who takes or gives commissions for or to secure his patients lowers himself in his own estimation, else he would turn on the light and inform the public or his patrons of his actions. The fee-splitter and commission-giver are parasites sapping and destroying confidence

in the medical profession. Such men never have been and never will be leaders in the medical profession or in scientific discoveries. They are not admitted to the American College of Surgeons nor to the *clinics* of the American Clinical Congress of Surgeons. In some states such actions are a criminal offense.

The fees for surgical work should be well considered and equitably adjusted so as to render justice to all and harm no one vitally interested. The surgical fee should be reasonable and in proportion to responsibility, character and competency of services rendered. Large fees for incompetent work or where people are not able to pay are a reproach to the profession. Large fees paid to the surgeon for operative work when the patient is not able to pay the family physician for honest service faithfully rendered is unjust and not in keeping with the higher principles of the medical profession. There is a golden rule to guide the honorable physician or surgeon in dealing with his patients: "Treat every patient as you would like to be treated if in their place, charge every patient what you would be willing to pay if in their place or circumstances."

Professional expert testimony has done much to lower the confidence of the public in the medical profession. It will ever be so, as long as the present legal methods of handling such cases continue. The state should have statutes governing expert testimony, especially in cases of insanity or mental degeneracy in which the Superintendent of the State Insane Asylum and a competent physician selected by each, the prosecution and defense, shall constitute a tribunal to decide the mental responsibility of the person in question. An examination by such a tribunal would be much more likely to secure justice for both the accused and the state and far more creditable to the legal and medical profession.

Medicine in its evolution has had much to contend with; in primitive times it was primitive in character, passing through many stages from incantations, mysticism and ignorance into the light of knowledge and scientific investigation, so that to day it is one of the most learned professions on the face of the globe.

One can not read "Medical Research and Human Welfare," by W. W. Keen, M. D., F. A. C. S., giving a record of personal experience of professional life of fifty-seven years, without being impressed with the wonderful medical age in which we live, the immense value of medical research to human welfare and the debt of gratitude the general public owe the real workers in the medical profession.

In evidence of this statement let us take a brief survey of some of the recent discoveries in medicine: Keen classes bacteriology as the most important discovery ever made in pathology and probably the most important discovery ever made in any department of medicine. The foundation for this work was laid by Pasteur, Lister and Koch, and principally within the last thirty years. "Pasteur and Lister exploded the theory of spontaneous generation and established the germ theory of putrefaction. * * Their work laid the foundation for the establishment of principles of asepsis, antisepsis and disinfection in modern surgery and obstetrics, also the basic principles that govern the development, control and prevention of many infectious and contagious diseases." In days gone-by puerperal fever has been known to slay as many as 50 per cent of mothers in some hospitals. The death rate was so high, they had to be closed, and some physicians had to give up their obstetrical practice for a time, their death rate was so high.

"In 1879 (Keen's M. R., p. 44), less than forty years ago, this subject was being discussed at the Paris Academy of Medicine and all were ignorant of the cause. Pasteur suddenly interrupted an eloquent speaker and stated it was of bacterial origin and carried by the doctors and nurses. His colleague retorted he was afraid this strange microbe would never be found. Pasteur at once stepped to the blackboard and drawing what we know to be the streptococcus, said

there it is and there it was. What was the result? Now puerperal fever slays only 1 in 300 to as low as 1 in 1,250.

Keen continued: "Verily, Pasteur was one of God's best gifts to humanity. Every wife and every husband should know these facts and treasure Pasteur's memory in their hearts."

Contrast surgery during the Civil War with the present World War. We are told (p. 55) "that from wounds, especially gunshot wounds, the death rate was fearful. Blood-poisoning frequent and the death rate 97.4 per cent; lockjaw frequent and death rate 89 per cent; in ordinary operations the death rate ranged from 15 to 25 and 50 per cent or more. To open the head, the chest, or the abdomen was then almost equivalent to a death warrant."

In this day abdominal operations are comparatively safe in competent hands; in interval operations for appendicitis the death rate should not be over 1 in 200, 300 or 400 operations; the brain, lungs, and even the heart are fruitful fields for surgery.

Crile, speaking at the last Clinical Congress of Surgeons in regard to the British Medical Service, states: "They kept their vast army, that vast army that lives like amphibians in the chill waters and mud of Flanders, more free from colds, from pneumonia, from typhoid, than our civilian population of Chicago. Through perfection of organization, through research and surgical experience, through the invention of new instruments and apparatus, of new methods and new technique, the death rate from wounds, operations and infections in the British and French lines is reduced to an incredible minimum."

Major Charles H. Mayo, at the same Clinical Congress, stated: "Only through medicine has it been possible, with the enormous number of men in the field, to carry on the war for three years. Had it not been for medical efficiency the war would have been terminated long ago, from the same causes that have terminated wars in the past—through disease and infection. We would possibly have had brought on us a very unsatisfactory peace, which would be worse than no peace at all. Through medical efficiency the war will be carried on to a final termination which will end the wars of the present age, and democracy will be safe in the world. We are proud to say we are returning in excess of 80 per cent injured back to the front."

Sir Berkeley Moynihan, Colonel British Army Medical Corps, at the same congress stated: "History of medicine in the tropics is the history of the military medical service of America and Great Britain. The hands of all men build the Temple of Science, but now and then, once, perhaps twice, in a generation we have the high privilege of having among our number one of the great architects of the Temple of Science. You are perhaps as full of joy as I am, to think at this moment and on this platform are two of the men, both of them Americans, who have designed some of the magnificent additions which are being made to that glorious Temple of Science in Medicine and in Surgery. I need not tell you I refer to General Gorgas and Major Mayo."

Dr. D. J. Davis (November *Scientific Monthly*, p. 399) writes: "We speak of this war resulting in the loss and maiming of millions. Bubonic plague, the black death, five centuries ago in one epidemic in Europe killed 25,000,000 persons. One might point to the army of 150,000 in the United States alone carried off each year by the tubercle baccillus, another 150,000 destroyed by the pneumococcus, 25,000 by the typhoid baccillus, several thousand more by smallpox, and so on. What a pity some of the energy, time and money spent on the great war could not be spent in combatting the deadly microbe. A combined attack against several of our great diseases, such as the nations are making against each other, would no doubt result in their extinction."

In the fight against yellow fever we are told "Dr. Agramonte nearly lost his life, that Dr. Lazear and Miss Maas, a nurse, and others fell as victims in experimental work.

As a reward to the world from their sacrifices yellow fever has been banished from our shore, also from Cuba, and by the scientific work following, the Panama Canal Zone has been made practically a health resort."

Keen tells us that Goldberg of America and Nicolle of Algiers discovered that the body louse was the cause of typhus fever. Continuing, he states: "Among Americans who have confirmed this discovery, I wish to mention with special honor two of our fellow countrymen, Drs. Conniff and Ricketts. Both at the threshold of promising careers, they fell at their posts, and have added two more names to the martyr-roll of science. They fully understood their danger but cheerfully made the sacrifice."

Listen to what Pasteur did for humanity (p. 52): "He discovered the real cause of fermentation, then of putrefaction. He laid the ghost of spontaneous generation. He built the foundation of bacteriology. He proved the germ theory of disease. He saved for his beloved France the several industries of beer, of wine, of vinegar, of silk, of cattle, of poultry, of swine. Better than all these he showed how to abolish child-bed fever and hydrophobia among his fellow men. Fifteen victories and not one Waterloo!"

Bubonic plague in the past has killed its victims by the thousands or by the million, but thanks to medical research such destruction of human life is a thing of the past. It has been proven (M. R., p. 70) that the rat flea carries the infection from rat to man. "In the outbreak of bubonic plague in San Francisco, Surgeon-General Rupert Blue looked after the patients, trapped and poisoned every rat and rat-proofed all their possible places of refuge. For eight years or more there has not been a case of plague in San Francisco.

"In the outbreak in New Orleans, 1915, nearly five hundred thousand rats were caught; two hundred and sixty-five infected rats were found in nearly three hundred thousand buildings which were examined, and the epidemic was arrested."

We have here two object lessons of value. The states were failing to cope adequately with the situation and the Government took charge and a blind man could recognize the result. When the United States declared war, what about the individual states' readiness and preparation for war—how efficient were the state militia? What lessons are we now learning in Government control in order to secure efficiency? The states must be subordinate to the Government in war questions and for efficiency must also be in health questions, and I might say the prohibition question is also a national question if we secure efficiency of the human race.

Diphtheria has slain children by the thousand in the past, but medical science with the aid of animal experimentation has developed antitoxine with the following results: "The death rate per 100,000 population has been reduced in Siberia from 411.9 to 40.1; Prussia, 143.1 to 22.6; Denmark, 134.0 to 7.9; Austria, 119.3 to 25.9; United States, 120.1 to 27.1."

Typhoid fever gives the following record (Keen, M. R., p. 103): "In the Civil War, 79,462 cases, 29,336 deaths; Boer War, 58,000 cases, 8,000 death; Spanish-American War, 20,738 cases, 1,580 deaths—86 per cent of the entire deaths in that entire war was due to typhoid fever.

"If the same ratio had prevailed in the present war there would have been 1,000,000 cases in the British army alone.

"In the early part of the war a few cases occurred for want of material for typhoid vaccination, but now it is stated: 'Typhoid fever in war has practically disappeared.'"

This is only an index of what might be accomplished if the general public would only use the means at their command.

Smallpox gives another lesson recently (M. R., p. 64): "Between 1905 and 1915 Dr. V. G. Heiser, health officer in the Philippines, vaccinated over 8,000,000 without a single death. In India, during 1914 and 1915, 9,462,901 were vaccinated without a death, even with unsanitary conditions. Dr. Heiser vaccinated 1,000,000 in and around

Manila; before vaccination there was yearly about 6,000 deaths from smallpox, the year after vaccination not a single death. Dr. Heiser also reports: 'On a small isolated island of 2,000 population an old woman inoculated several cases with pus from a case of smallpox, resulting in 1,000 cases of smallpox with 400 deaths. Immediately after 800 were vaccinated, 400 escaping to the mountains; of the 800 there were no cases of smallpox and no deaths.'

"In 1885 a Pullman porter reached Montreal with smallpox, causing an epidemic with 3,164 deaths, and disfigured and blinded 10,000 or 20,000 more, besides the financial loss to the city, and all this from the acts of one person."

In an active practice of forty years I have never seen or known of a case of death or amputation from vaccination against smallpox, yet with the above facts and many more that might be secured, we have antivaccination fanatics and cranks parrotlike condemning vaccination. To scientific medicine they simply display their arrogance and ignorance and are a menace to any community. I have seen a genuine case of smallpox cure such cranks.

We have another set of cranks with us equally as arrogant and ignorant, the antivivisectionists. They are feather-weight mentally, not competent to do research work themselves, but with their ego mania try to obstruct research workers devoting their lifetime to research and human welfare, often risking their lives and some even sacrificing their lives for the good of humanity.

There is a brighter and better day coming for scientific medicine. Crile tells us in "Man — An Adaptive Mechanism," "That medicine is well through the second stage and has entered the final stage of synthesis in which practical working principles are being formulated, is evidenced especially by the increasing control of infectious diseases. In many instances the older volumes filled with dissertations on certain diseases contained less useful information than is now comprised in single sentences or words which indicate both origin and control. With malaria and yellow fever explained by one word, mosquito; diphtheria reduced to bacillus and antitoxine; smallpox disposed of in vaccination; bubonic plague apprehended in infected vermin, and synthetic chemistry producing such a specific as salvarsan, there is hope for a like conquest of the host of chronic diseases, and a fairer promise of a future for preventive medicine."

What we need is more confidence in scientific medicine on the part of the general public and less resort to patent medicines, quack remedies and humbugs. A profession that has done so much for humanity by scientific research in laboratory investigations, animal experimentation and synthetic chemistry, resulting in the saving of thousands upon thousands of lives of men, women and children in the prevention and treatment of diphtheria, yellow fever, cholera, typhus fever, typhoid fever, hydrophobia, bubonic plague, syphilis, smallpox, malaria, tuberculosis, hookworm, tetanus, etc., and to these add the achievements of aseptic and antiseptic surgery in war and in peace; the antiseptic midwifery, saving the lives of wives and mothers and making many homes happy, and if this is not enough, count up the value of human lives saved in dollars and cents, and include it; even more, if you like, count up the millions upon millions of dollars saved in the prevention of diseases of animals, and what more could one want to inspire confidence in medical science?

For efficiency the profession will have to better qualify and fit themselves for cooperative work, health work and preventive medicine, and the public must see that properly qualified physicians are selected as health officers and paid an adequate salary for services rendered. Health work is civic business which means life and health or disease and death. For efficiency and health the health officer should be selected because of his fitness and qualifications and not as a political convenience; then he should have the proper cooperation of the city officials and citizens.

In conclusion, I wish to urge the profession to higher ideals in medicine. Ethics is said to be the "basic principles of right action." Then is any one willing to say he is not actuated by principles of right action in his relation to the profession and the public?

What we need is higher ethical relations and greater confidence in each other. Then the public will have greater confidence in the medical profession.

THE UVULA.*

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The pharyngeal uvula is not a large organ, either in size or importance. The importance of its function probably does not compare with that of the cerebellar uvula; howbeit, the cerebellar functions are not clearly defined.

Its function is discussed by Lennox Browne, to whom frequent reference will be made, as follows: "The utility of the uvula has been the subject of much speculation. It is without doubt of great service, together with the rest of the palate and the epiglottis, in cutting off the oral cavity from the true respiratory channel in normal breathing. Probably it also acts as a drip stone, conducting the nasal secretions to the glosso-epiglottic forsæ, whence they are directed by the epiglottis into the pyriform forsæ, as pointed out first by Dobell. When relaxed abnormally, the nares are imperfectly closed in the acts of both swallowing and tone production, and there is a general paresis of the palatal muscles." Browne devotes more space to the uvula than all the other authorities at my command. Gray dismisses its anatomy with a few lines, as do other works, and as will be done here. Its histology is essentially similar to the rest of the soft palate. Its anatomy consists of the azygos uvulæ, a muscle composed of two cylindrical bundles in the median line of the soft palate, each arising from the posterior nasal spine of the palate bone.

Among late authors its pathology is briefly considered. Elongation of the uvula is discussed by Price-Browne, Knight and Bryant, and Moore. Uvulitis, by them and by Shurly. Edema by Price-Browne. Moore takes up tumors. Lennox Browne discusses uvular symptomatology, pathology and treatment at such length and in such detail that circumstantial reference to his work is unadvisable. A brief reference is necessary to illustrate the conception of the uvula some forty years ago. Browne states that diseases of the uvula are 5 per cent of all throat diseases, and nearly 7 per cent of affections of the fauces and pharynx. His presentation of symptoms is a formidable indictment. I quote: "These vary greatly in different cases, and often require the nicest judgment for their discrimination. Thus, while one patient with an evidently very pendulous uvula will not complain of any inconvenience and then with apparently but slight local cause will exhibit well-marked symptoms. The usual sensation is that of a desire to frequently clear the throat of a source of irritation, this desire being only experienced at particular periods; as, for instance, on rising in the morning, on coming into a warm out of a cold atmosphere, and also when the general system is fatigued or disturbed. In more severe cases, there will, under similar circumstances, be hacking, irritable cough, with expectoration of small muco-gelatinous pellets, paroxysmal and spasmodic attacks, retching and vomiting. I have seen several cases in which the last-named symptom occurred on the patient taking the ordinary cold morning bath, and in one instance the breakfast had been daily rejected for many weeks. In more than one case, gargling after cleansing of the teeth had been followed by violent spasm, with bloody expectoration, clearly traced to come from the pharynx. When the uvula is very relaxed the greatest discomfort is felt as the patient lies down at night; many cases occur of spasm of the glottis—due to reflex irritation from this cause—so severe as to awake

*Read before the fifty-fifth annual meeting of the Florida Medical Association, at Tampa, May 15-16, 1918.

patients from sleep." "It is but natural that symptoms such as those described combine to bring the patient to a state of great nervous prostration; the want of sleep, the cough and the retching will produce great weakness and even emaciation, and the patient will appear to be suffering from phthisis or other grave organic disease; especially will this be suspected in those occasional cases in which there is an account given of fixed pain at some point in the chest, which on examination is found to be only another effect of reflex irritation." "Case 23—I was consulted in the year 1873 by a medical practitioner who complained of constant pain in the left subscapular region, with irritable cough, loss of flesh, and impairment of general health. On the recommendation of two physicians, eminent in chest diseases, he sold his practice, but he entirely recovered after the removal of his uvula. He is still well, and but recently retired from active professional work on account of advanced age." Case 24 is similar. "Gastric derangements will be aggravated by the presence of an elongated uvula, while on the other hand the symptoms caused by the relaxed palate will be increased by anything likely to induce or increase disorders of digestion."

The discussion goes on to much greater length, and he then takes up the treatment. He uses astringents and removal, stating "it is better to take off too much than too little," regretting that "it is unfortunate that this operation should encounter ill-founded opposition," and "that anything should be done to bring disrepute upon so valuable an operation, of which it has been truly written that "while hardly any slight affection of the throat produces such serious symptoms as elongation of the uvula, it is equally true that there is no slight operation that gives such complete and permanent relief as removal of the elongated extremity." The after-treatment is impressive, including styptics; cocain, applied to relieve pain, sometimes lasting a week; applications to the ear for reflex pain, and finally caution that the symptoms may persist for some time. The caution would seem to be timely. The after-treatment seems a trifle ponderous to apply to so "slight an operation." Bifid uvula, the common malformation, is discussed, and tumors, including fibromata, adenomata, papillomata, cysts, angiomata, and one epithelioma are recorded. Tumors are usually secondary to a primary condition elsewhere in the soft palate. Finally, the uvula was removed in diphtheria.

A case of uvulotomy lately seen and the memory of another seen some years ago interested me in the subject. I took up the matter with some hesitation, fearing that I would have to rely on my limited experience. Such proved to be the fact, until I discovered Lennox Browne. The subject is briefly dealt with in current literature, but even there uvulotomy is casually advised. In Browne I unearthed a mine of information, such as it is, of the nightmare variety. It is difficult to conceive how such absurdities originated. It is an instance of how a really good man can err. His work on anatomy, physiology and pathology is instructive, even now.

My experience with uvulotomy is limited. I may have done it a few times in general work. Since doing special work I have not done it. In my throat work, however, I have seen many uvulas, and have often been asked to operate. The usual complaint is that the palate is down, calling to mind the remedy of tying up a tuft of hair. With regard to the position of the palate and uvula, it should be borne in mind that their normal position, in nasal respiration, is in contact with the upper and posterior surfaces of the tongue, and in that sense, being down is just where they belong. I once heard an instructor, in answer to a complaint that the palate was down, remark that usually meant a syphilitic ulcer.

I have seen diseased uvulas, but it has always been when associated with a pathology of the soft palate and pharynx, especially of the lingual tonsil, the treatment for which relieved the uvula. Such a thing as a

selective pathology of the uvula has not come under my observation.

The function of the uvula seems to be an open question, mentioned above. My solution is to irritate the soft palate, and watch the uvula. During contraction of the soft palate the uvula partly, sometimes entirely, disappears. To me that indicates that, whatever other functions it may have, functionally as well as anatomically, it is an integral part of the soft palate. Assuming this, it is then apparent that the function of the soft palate is endangered by injury to the uvula. Admitting that some uvular tissue may be redundant, and that results of uvulotomy are not all unfortunate, the line between usefulness and uselessness is too indefinite to carelessly injure a useful organ. Some years ago I saw a patient who was a victim of too extensive uvulotomy, and ever since he has had difficulty in articulating and swallowing. Within the last few days I saw a woman, who was complaining of a nasal deficiency in speech, but no trouble swallowing. The uvula was absent, and on contracting the soft palate a notch was seen. The condition, while not endangering health, is incurable and a source of much annoyance. Its gravity is apparent when it is realized that it is a result of meddlesome surgery, and wholly unnecessary. Even when necessary, and it undoubtedly is at times, the advice given by Browne, to take off too much rather than too little, should be disregarded. The uvulotome, while a mechanically unsatisfactory instrument, is safer than the forceps and scissors. When stretched by the pull of the forceps too much tissue may be easily removed, and for such removal there is no remedy.

PROPAGANDA FOR REFORM.

CAPSULES OF BISMUTH RESORCINOL COMPOUND.—According to the label, each capsule of Bismuth Resorcinol Compound (Gross Drug Co., Inc., of New York City) contains bismuth subgallate, 2 grs.; resorcinol, 1 gr.; betanaphthol, 1/2 gr., and creosote (beechwood), 1 m. The preparation was declared inadmissible to New and Nonofficial Remedies because unwarranted therapeutic claims were made for it; because the name is not descriptive of its composition, and because the combination of the stated drugs in fixed proportions is irrational. (Reports Council Pharmacy and Chemistry, 1917, p. 139.)

COTARNIN. — Cotarnin is an artificial alkaloid derived by oxidation from narcotin, by a process analogous to the derivation of hydrastinin from hydrastin (which again differs from narcotin only by an additional OCH_3 group). Cotarnin hydrochlorid is marketed as stypticin, and cotarnin phthalate as styptol. Cotarnin is used systemically mainly against uterine hemorrhage, especially in menstrual hemorrhage, endometritis and congestive conditions. It is ineffective against postpartum hemorrhage or bleeding from gross anatomic lesions, and probably also against hemorrhage in other internal organs. Local application of cotarnin in substance or concentrated solution has a direct vasoconstricting effect and is used in tooth extractions, epistaxis, etc. (*Jour. A. M. A.*, May 11, 1918, p. 1396.)

ELIXIR NOVO-HEXAMINE.—The A. M. A. Chemical Laboratory reports that Elixir Novo-Hexamine (Upsher Smith, St. Paul, Minn.) is not a "stable, palatable, potent preparation of Novo-Hexamine, an acid compound of hexamethylenamine," as claimed, but a flavored and colored solution of sodium acid phosphate and hexamethylenamine in diluted glycerol. The Council on Pharmacy and Chemistry considered the report of the laboratory and the advertising claims, and declared Elixir Novo-Hexamine inadmissible to New and Nonofficial Remedies because its composition is secret; because the ill-advised used by the public is invited; because unwarranted therapeutic claims are made for it; because the name is misleading, and because it is irrational to prescribe hexamethylenamine and sodium acid phosphate in fixed proportions. (Reports Council Pharmacy and Chemistry, 1917, p. 142.)

FORMOSOL. — Sunshine's Formosol (The Formosol Chemical Co., Cleveland, Ohio) is claimed to contain 18 per cent formaldehyde in a solution of soap. The preparation was refused recognition by the Council on Pharmacy and Chemistry because it was advertised indirectly to the public and because unwarranted therapeutic claims were made for it. (Reports Council Pharmacy and Chemistry, 1917, p. 145.)

KALAK WATER. — Kalak Water (The Kalak Water Co., Inc., New York) is a carbonated, artificial mineral water, said to contain in one million parts sodium carbonate, 4,049.0; sodium phosphate, 238.5; sodium chlorid, 806.3; calcium carbonate, 578.2; magnesium carbonate, 48.9, and potassium chlorid, 47.9. In view of the false and absurd claims made, the Council on Pharmacy and Chemistry declared Kalak Water inadmissible to New and Nonofficial Remedies. (Reports Council Pharmacy and Chemistry, 1917, p. 148.)

MAYR'S WONDERFUL STOMACH REMEDY. —This is a "patent medicine" adaptation of the old "fake gallstone" trick, which consists of selling large doses of olive or other oil and a saline cathartic. The result of taking this combination is the passage of a number of soapy concretions which the victim is persuaded to believe are gallstones. In 1915 Mayr was convicted under the Federal Food and Drugs Act for making false and fraudulent claims for his "remedy." As the Food and Drugs Act applies only to the packages of a preparation and not to store window displays and newspaper advertising, Mayr has revised the labels, etc., for his "patent medicine," but still makes misleading claims elsewhere. (*Jour. A. M. A.*, May 11, 1918, p. 1393.)

PYOCYANEUS BACILLUS VACCINE.—When this vaccine was admitted to New and Nonofficial Remedies in 1910 it gave promise of having therapeutic value. Now the firms whose products are described in New and Nonofficial Remedies advise the Council on Pharmacy and Chemistry that they have ceased to make the vaccine because of lack of demand. Holding the lack of demand as evidence that the vaccine had proved without value, the Council directed its omission from New and Nonofficial Remedies. (*Jour. A. M. A.*, May 18, 1918, p. 1496.)

THE DR. CHASE COMPANY. — A fraud order prohibiting the use of the mails has been issued by the postoffice department against the Dr. Chase Company. This patent medicine concern sold three remedies—pills —which, before the Food and Drugs Act made lying on the label irksome if not expensive, were known, respectively, as "Dr. Chase's Blood and Nerve Food," "Dr. Chase's Kidney Food" and "Dr. Chase's Liver Food." Since the enactment of the Food and Drugs Act, however, the term "food" in the name of the nostrums has been changed to "tablets" for obvious reasons. In 1917 K. E. Hafer, the proprietor of the Dr. Chase Company, was fined under the Food and Drugs Act for misbranding. (*Jour A. M. A.*, May 25, 1918, p. 1557.)

SYPHILODOL. — According to the French Medicinal Company, Inc., which markets the product, Syphilodol "is a synthetic chemical product of silver, arsenic and antimony * * * ." Nowhere in the advertising matter is there a more comprehensive statement regarding the composition of this "new synthetic" than that just quoted. The product is being examined in the A. M. A. Chemical Laboratory: the examination having advanced sufficiently to show that Syphilodol contains considerable quantities of mercury. Although the advertising leaflet claims that the preparation is "the formula of the late Dr. Alfred Fournier of Paris" and has been exhaustively tested by Metchnikoff, a careful search of French medical journals fails to show any report on Syphilodol. (*Jour. A. M. A.*, Feb. 23, 1918, p. 559.)

TROUSSEAU'S WINE. — This obsolete combination of drugs acting on the heart and kidneys is made by maceration of digitalis, squill and juniper berries in wine and alcohol, and adding potassium acetate to the expressed liquid. (*Jour. A. M. A.*, Feb. 23, 1918, p. 559.)

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SURGEON-GENERAL GORGAS AND THE RESPONSIBILITY OF THE MEDICAL DEPARTMENT OF THE ARMY.

No other branch of the Army is nearer the hearts of the people in time of war than the Medical Department. Fathers and mothers whose sons have enlisted may reconcile themselves if these sons are killed in battle; but if they have reason to fear that their sons have been neglected when sick or wounded, they develop a spirit of bitterness for which there can be no antidote. This natural attitude of mind is more or less apparent in all wars. A mother may bear with pride the news of the death of her son struck down in a charge or while stubbornly resisting an advancing foe; there is no consolation when she has reason to believe his death unnecessary, or that his health was not guarded by every known agency. If he dies from disease, as many soldiers must, she wishes to feel that kindness, intelligence and skill were at his service, and that the best of human effort was put forth in the endeavor to save him. If she realizes that he had every aid in his extremity that he could have enjoyed at home, she consoles herself, knowing full well that death must come to all.

While failure of the Medical Corps in the prosecution of war leads to grave disaffection at home, it has an even more serious effect on the morale of the Army itself. The soldier may bear great discomfort in his quarters or on the march—he may even court death on the battlefield — but he expects the best of care, sympathetic and kindly attention, and competent medical skill when he is sick or wounded. In this he is fully within his rights. When these helps fail, he becomes discouraged and even the ardor of patriotism fails to sustain him. Individually he becomes morose and complaining and in the mass inefficient. An army may be decimated by the missiles of the enemy and not only retain its courage, but become contemptuous of danger and death; when wasted by disease, however, or when its wounded soldiers are neglected

on the field, it ceases to be an efficient fighting machine.

The disastrous effects of inadequate protection of the health and life of the soldier are not confined to disaffection at home and demoralization in the ranks; for disaffection and demoralization, even when moderately felt, lead to a great reduction in the fighting strength and the combative spirit. All nations engaged in this war realize the vital importance of the medical service and have provided liberally for its equipment, personnel and maintenance. In the European armies, those of our allies and those of our enemies, medical officers have been given higher rank, invested with more authority and held to greater responsibility than has been known at any time in the past. The medical service has responded most satisfactorily to these advancements in honor, trust and duty, and with the exception of the shameful failure of line officers to heed the reasonable requests of the Medical Corps in the Mesopotamian campaign, there has been no cause for complaint.

So far as we have advanced in this war, there is no ground for serious complaint of or by the medical service. The President of the United States has recommended advanced rank and authority for medical officers, and at the present writing it seems that both houses of Congress are in sympathy with this request. Appropriations have been liberal and, best of all, the Medical Department has so guarded the health of our soldiers that no army, even one-tenth the size of ours, has ever been mobilized with sickness and death rates so low. Indeed, so far as we know, no army of raw troops has been assembled with the death rate calculated for all ages as low as that of the civilian population from which the soldiers have been drawn. In this country this is about 14 per thousand annually. In the Spanish-American War the death rate from disease greatly exceeded this figure, and ran above 20 per thousand. During the six winter months of 1917-1918, the annual death rate among all soldiers in this country was 9.1 per thousand. In many camps the death rate has been lower than in the same age group in those sections of the country from which the troops have come.

This, in brief, pictures the responsibility of the Medical Department of the Army. It is a responsibility which it gladly assumes. It may promise without a tinge of doubt that it will do its utmost to safeguard the morals, the health and the lives of our soldiers. As we write, there stands out the prominent fact that in this work the Medical Department has had as a leader a man who has the respect and confidence of all the American people and of all the scientists of the world.

The public, and the medical profession especially, are fortunate in having at the head of the Medical Department of the Army, in the present crisis, Surgeon-General Gorgas. General Gorgas, renowned for his successful combat with yellow fever, malaria and septic pneumonia on the Canal Zone, the work for which he has received the highest recognition among scientists and the people in general, has had a bigger problem among the troops of our country during the past winter and has achieved the same degree of success. His reputation will now include not only his remarkable record on the Canal Zone, in Havana and in South Africa, but also his efforts and the results in our camps during the past winter. He has commanded in our first great battle of this war, a battle in which more than a million men were engaged against dangerous diseases; and he has won a great victory.

Few men carry greater responsibilities than does General Gorgas. General Pershing in France must have more, and still more soldiers. Every unfit man who reaches him is a burden, not a help, and not only fails to add to his fighting strength but lessens it. Moreover, even the fit who reach France must be kept fit, and this burden also lies on the shoulders of General Gorgas. Still further, he must care for the wounded, return to the fighting line those whom medical and surgical skill can speedily restore, and bring back home those more seriously injured and

so rehabilitate them that they may return to civil life in the greatest possible comfort and with the least possible dependence on the assistance of others. His tasks are numerous and varied, but in the execution of them he may utilize his long experience and the wisdom it has given him. Moreover, his tasks will be performed with the most sincere sympathy for those involved. In the accomplishment of these duties every specialty in preventive and restorative medicine must be used. That General Gorgas has recognized this to the fullest extent is shown by his calling to his assistance many eminent men in every branch of the healing art. Indeed, he did not have to call, for they came and asked if they could render assistance. The readiness with which the very cream of our profession have left the comforts and attractions of their homes, disregarded their own financial and professional interests, shut their eyes to what it may cost them and their families, and offered their services, is due not only to patriotism, but also to their respect for, and admiration of, General Gorgas. They have rendered him the highest tribute that has ever come to a member of our profession. With General Gorgas at the head, the medical profession stands ready to fill the medical quota for any number of millions of men the President of the United States may call to arms.—*Jour. A. M. A.*

COUNCIL OF NATIONAL DEFENSE.

Some of the activities and interests of the General Medical Board of the Council of National Defense, April, 1917—April, 1918, as reported at the Annual Meeting, Sunday, May 5, 1918, New Willard Hotel, Washington, D. C.

The following statement, which is authorized by the Medical Section of the Council of National Defense, in a brief summary of the report of Dr. Franklin Martin, member of the Advisory Commission and chairman of the General Medical Board of the Council of National Defense, with mention of some of the leading interests and activities of the year of the Board and of the Medical Section, was presented at the annual meeting of the General Medical Board, May 5, 1918:

General.

Secretary of War Baker, on April 2, 1917, authorized appointment of General Medical Board. Dr. Martin designated thirty-five physicians and surgeons, many of whom have since entered on active service abroad. Total now is seventy-seven. Executive Committee consists of Surgeons General of Army, Navy, and Public Health Service, Dr. Franklin Martin, Dr. W. J. Mayo, Dr. Wm. H. Welch, Dr. Victor C. Vaughan, Dr. F. F. Simpson, Rear Admiral Cary T. Grayson, and Dr. Wm. F. Snow, Secretary. The first meeting was held April 9, 1917.

Requested medical men returning from abroad to furnish information regarding conditions observed in medical services of allied armies; which information was carefully summarized for reference.

Responded to request of Surgeon General to assist in increasing enrollment in Medical Reserve Corps. Enrollments in M. R. C. have been increased from 1,800 in April, 1917, to over 21,000, of which 16,042 are on active duty.

Requested fifty medical societies to furnish lists of their members fitted to perform special work for government.

Child Welfare.

Formed Committee on Child Welfare, comprising representatives of several government departments, educational institutions and national organizations, to coordinate child welfare activities, and formulated program covering problems of the child up to school age, which program has been issued to the states through the medium of the States Council Section and the Woman's Committee of the Council of National Defense.

Appointed committees (a) to study best graphic methods of teaching child welfare; (b) to study food values necessary to children and prepare dietaries; (c) to report

best procedure as to midwife question in present war emergency, and (d) to consider advisability of investigation of institutions caring for children.

Civilian Cooperation in Combating Venereal Diseases.

Developed joint conferences of medical and lay citizens in fifty cities, with officials, to discuss plans for venereal disease clinics or law enforcement measures.

Formulated list of eight measures essential to successful campaign against venereal diseases, and sent to State Boards of Health.

Appealed to State Pharmaceutical Associations for Boards of Pharmacy to assist in eliminating sale of nostrums.

Arranged trips for lecturers who aided Boards of Health in thirty states and stimulated them to more vigorous work.

Partially as a result of correspondence with State Boards of Health, twenty-six states have adopted measures requiring reporting of venereal diseases, nine have special venereal bureaus, fourteen provide free laboratory diagnosis, six provide arsphenamine, practically or absolutely free. Only seven states classified as complacent.

Partially as a result of letters to 1,000 mayors, forty-nine cities provide for isolation and treatment of venereal cases, fifty-one require reporting of venereal diseases, forty-three have clinics, seventy-eight are conducting educational work.

Informed editors of health bulletins and labor journals of details of campaign against venereal diseases.

Distributed printed material and sent personal and circular letters to thousands of persons in communities adjacent to army camps, enlisting their cooperation.

Dentistry.

Appealed to dental profession through various dental associations, materially increasing enrollment in Dental Officers' Reserve Corps.

Instrumental in having military instruction included in curricula of dental colleges, and in having applicants for enrollment in Dental Surgeons Corps specially trained.

Cooperated with manufacturers in having dental instruments and supplies standardized.

Secured volunteer services of civilian dental profession in eliminating dental disabilities of recruits.

Recommended improved courses in dental surgery in Army and Navy medical schools.

Initiated investigation as to relation of trench mouth disease to oral and general disease.

Dental Committee recommended higher rank for dentists in Army Dental Corps.

Hospitals.

Recommended to general hospitals reorganization of staffs, in order to release as many as possible for Army and Navy service, and urged each person whose services could be spared to apply for appointment.

Hospitals classified exhaustively as to size, convenience to transportation, equipment, and all other details.

Investigated subject of portable hospitals, and recommended purchase of a limited number by the Surgeon General of the Army.

Classified and tabulated for use of Surgeon General's Office data as to private houses and large buildings offered for use as military hospitals.

Hygiene and Sanitation.

Recommended to War and Navy Departments that zones around camps and cantonments be placed under military control in order to protect troops from venereal infections. Encouraged organization of Fosdick Commissions or Training Camp Activities.

Appointed subcommittees on drug addictions, alcoholic control, public health nursing, tuberculosis, and health statistics, which committees have assembled information and recommended definite sanitary measures for guidance of Army, Navy, Public Health Service, American Red Cross, and Civil Health Agencies.

Work of subcommittee on venereal disease has expanded, and it has become the Com-

mittee for Civilian Cooperation in Combating Venereal Diseases, a general committee of the General Medical Board.

Industrial Medicine and Surgery.

Instituted an Advisory Committee on Industrial Hygiene, comprising representatives from Public Health Service, Departments of Agriculture, Interior, Commerce, Labor, and of Organized Industry, Organized Labor, Organized Medicine, and Organized Industrial Medicine, for the purposes of providing against unnecessary human waste in industry and society during war, to offset drain of man-power from industry through raising of military forces to meet need for increased production, to avoid preventable deaths from accidents and disease, and to improve surroundings of workers.

Legislation.

Drafted section of Army Bill eliminating sale of alcoholic drinks and prostitution in five-mile zone around camps and cantonments; indorsed by Council of National Defense, and enacted into law within ten days of original rough draft.

Induced authorities to provide for enlistment of medical students of well-recognized schools in Enlisted Medical Reserve Corps, and completion of course before being called into military service. Similar effort made in aid of premedical students.

Instrumental in having American concerns licensed to manufacture salvarsan, and other German-owned medicinal preparations. Quantity previously sold for $4.00, now furnished Government at $1.00.

Made considerable effort to have rank of medical officers made commensurate with the service which the nation expects from the profession.

Medical Schools.

Urged students to continue medical education so that upon entering government service they might be fully trained; also urged students to apply for commissions in Medical Reserve Corps upon graduation.

Urged schools to release teachers for enrollment in Medical Reserve Corps.

Asked heads of educational institutions to advise premedical students to enroll in medical schools of their choice as soon as possible.

Asked medical schools to allow four-year students to substitute senior year in base hospital instead of school, if emergency arises.

Medical War Manuals.

Published four war manuals: 1, "Sanitation for Medical Officers", by Edward B. Vedder, M. D., Lieut. Col., M. C., U. S. A.; 2, "Notes for Army Medical Officers," by T. H. Goodwin, Lieut. Col., R. A. M. C.; 3, "Military Ophthalmic Surgery," by Allen Greenwood, Major, M. R. C., G. E. de Schweinitz, Major, M. R. C., and Walter R. Parker, Major, M. R. C., and, 4, "Military Orthopedic Surgery," by the Orthopedic Council.

These also are ready for publication: "Surgery of the Zone of Advance," by George de Tarnowsky, Major, M. R. C.; "Notes on Military Surgery," by George W. Crile, Major, M. R. C., and "Lessons from the Enemy," by John McDill.

Nursing.

Instrumental in increasing by 20 per cent number of pupil nurses in training schools, by means of correspondence with college and school graduates, deans of women's colleges, school principals and Board of Education secretaries.

Distributed about 100,000 bulletins and leaflets for information of prospective students.

Made nation-wide survey of country's nursing resources, and urged heads of training schools and hospitals to increase their facilities.

Published series of twelve articles on nursing in newspapers throughout the country.

Instrumental in having nurses included in War Risk Insurance Law.

Secured evidence of need for military rank for nurses, and secured indorsements of this movement from many persons.

Conducted campaign for increasing number of candidates for nursing education.

Cooperated in preparing details of preparatory nursing course for college graduates at Vassar College.

Recommended to Surgeon General of the Army that increased accommodations for nurses be made at camps, and not less than one nurse be provided to six acutely ill men, that there be a reserve of not less than twenty-five nurses at each camp hospital, and that a qualified nurse tour military and naval hospitals to make observations; all of which recommendations have been favorably received. Miss Annie W. Goodrich appointed Inspector General of Nursing Service in all military hospitals in the United States and France.

Recommended to superintendents of training schools to speed instruction and hold final examinations and graduations early in 1918, and release graduates for government service.

Cooperated with Red Cross and with National Organization for Public Health Nursing in enrollment of public health nurses in office of Red Cross, and urged public health nursing agencies to release staff members for service in extra-cantonment zones and for rehabilitation work in France and Belgium.

Cooperated with Food Administration in having health nurses instructed in preparation of war-time food substitutes.

Reeducation and Rehabilitation.

Presented to Secretary of War plan for formation of Reconstruction Board, including representatives of Army, Navy, Public Health Service, Red Cross, Council of National Defense, Hospitals and Laboratories, Medicine and Surgery, Vocational Education, Labor and Industry. Secretary of War instructed Surgeon General to call conference and formulate plan. As a result bill was drafted providing for vocational rehabilitation and return to civil employment of soldiers and sailors disabled in line of duty.

Research.

Instituted investigation of conditions under which canned foods become deleterious.

Was instrumental in having University of Minnesota grow a supply of digitalis adequate for America's needs, to replace supply hitherto obtained from Germany.

Instituted tests of devices aimed to protect the ear from injuries by explosives.

Examined and card-indexed numerous antiseptics and disinfectants, furnishing all information to Medical Supply Department of the Army. Valuable cocaine substitutes and cheap disinfectants found usable. Silenced claims of vendors of large number of absolutely worthless preparations.

Placed subject of shell shock in hands of Dr. George W. Crile for study.

Instrumental in bringing into use several substitutes for ambrine, for treatment of burns.

Instituted study which led to discovery that various preparations of thromboplastin help prolong period for coagulation of blood.

Investigated various devices for preparation for sterilizing wounds and germ carriers.

Instituted study of processes for sterilizing drinking water which led to authoritative statement that use of chlorine is best means, chlorine now being used under all conditions.

Instrumental in having prepared authoritative review of war literature bearing upon injuries of the peripheral nerves.

Abstracted all obtainable literature on methods of destroying lice, and instituted experimental research.

Instrumental in having published critical review of methods and results of vaccination for smallpox.

Obtained from a noted French authority statement of results obtained by French investigators as to value of Widal test after vaccination for typhoid fever.

Standardization.

Held frequent conferences to study means by which production might be speeded, and demand for diverse types of appliances might be curtailed.

Conferences participated in by representatives of Army, Navy, Red Cross, Public Health Service, and manufacturers of surgical instruments and supplies. Result: Substantial increase in production of staple articles, standardization in types and issuance for four catalogues of staple medical and surgical instruments and supplies for use of Army, Navy and Red Cross.

States' Activities.

Obtained through State and County Committees names of physicians (a) available for service in the Medical Reserve Corps, (b) those not available because of physical disability, over-age (55), or because of home community need.

Requested cooperation of medical profession in asking aid of Senators and Congressmen for legislation in reference to advanced rank for medical officers.

Made survey of medical schools, as a result of which arrangements were made for enlistment of medical students of well-recognized schools in enlisted medical reserve corps and placing them on inactive list until completion of their medical education. Similar effort made in aid of premedical students.

Organized Volunteer Medical Service Corps for physicians ineligible to Medical Reserve Corps, because of physical disability, over-age, or essential home community need.

Prepared and mailed monthly to State and County Committees percentage tables of recommendations by Surgeon General for commissions in Medical Reserve Corps.

Cooperated with Provost Marshal General's Office in selecting members of Medical Reserve Corps as medical aides to governors. Formulated outline of duties of medical aides.

Cooperated in having representatives sent to forty-four states urging membership in Medical Reserve Corps.

Classified membership records of Medical Reserve Corps from code cards, a set being furnished for the Surgeon General's Office in Washington and a set for the representative of the Surgeon General with General Pershing's Army in France.

Made survey, through a subcommittee, of ophthalmologists of country, and requested those not needed for institutional and civic needs to join Medical Reserve Corps.

Same committee standardized methods of eye examinations. Held conference on re-education of blind soldiers, and conducted survey of workshops for the blind.

Made survey and classified, through a subcommittee, the otolaryngologists of country (brain, oral and plastic surgeons), requesting those available to join Medical Reserve Corps.

Recommended that specialists in head surgery be assigned to special duty in military hospitals; also that special hospitals be assigned for treatment of eye, ear, nose and throat cases; also recommended definite number of surgeons and assistants of each specialty, for chief hospitals and for each military division.

Women Physicians.

Prepared index and complete data as to all women physicians in the United States.

Prepared lists of anesthetists, laboratory workers, radiographers, sanitarians, specialists, and industrial surgeons, willing to serve.

Compiled data regarding recent graduates of thirty-five coeducational medical colleges.

Secured registration of 1,875 women physicians willing to serve—more than one-third of the total number in the United States.

OUR HONOR ROLL.

Our Honor Roll as published below now constitutes a grand total of one hundred and fifty-four physicians. They are divided in the services as follows: Medical Corps—Lieutenant Colonel, 1; Medical Corps, National Army—Lieutenant Colonel, 1; Medical Reserve Corps—Majors, 14; Captains, 29; 1st Lieutenants, 95; total, 140. United States Navy—Passed Assistant Surgeons, 2; Assistant Surgeons, 4; total, 6. National Guard United States (Fla.) — Majors, 3; Captain, 1; 1st Lieutenants, 4; total, 8.

MEDICAL CORPS, U. S. ARMY.

Home Address.

Lieut.-Colonel Joseph Y. Porter.....Key West

MEDICAL CORPS, NATIONAL ARMY.

Lieut.Colonel Raymond C. Turck.....Jacksonville

MEDICAL RESERVE CORPS.

Major Frank E. Artaud.....Key West
Major M. H. Axline.....St. Petersburg
Major John E. Boyd .....Jacksonville
Major Frederick G. Barfield.....Jacksonville
Major Chauncey L. Chase .....Fort Dade
Major Stanley Erwin .....Jacksonville
Major James B. Griffin.....St. Augustine
Major H. H. Harris.....Jacksonville
Major Graham E. Henson.....Jacksonville
Major Frederick E. Jenkins.....Palatka
Major Frank R. Maura.....Ojus
Major Lucien B. Mitchell.....Tampa
Major Harry Peyton .....Jacksonville
Major George A. Plummer.....Key West
Captain A. E. Acker.....Jacksonville
Captain E. G. Birge .....Jacksonville
Captain H. O. Black .....Jacksonville
Captain Andrew R. Bond .....Tampa
Captain O. L. Callahan .....Mt. Dora
Captain T. Z. Cason.....Jacksonville
Captain Lester J. Efird .....Tampa
Captain Albert H. Freeman .....Starke
Captain Julian Gammon .....Jacksonville
Captain J. Halton .....Sarasota
Captain Henry Hanson .....Jacksonville
Captain Mauriee E. Heck.....St. Augustine
Captain Samuel G. Hollingsworth.....Bradentown
Captain Owen H. Kenan .....Palm Beach
Captain S. M. R. Kennedy.....Pensacola
Captain William W. Mills .....Miami
Captain William B. Moon .....Lakeland
Captain Frederick C. Moor .....Tallahassee
Captain John MacDiarmid .....DeLand
Captain R. B. McLaws.....Tampa
Captain D. W. McMillan .....Pensacola
Captain John D. McRae.....Tampa
Captain Thomas A. Neal.....Sanford
Captain James B. Parramore.....Jacksonville
Captain James D. Pasco .....Jacksonville
Captain J. Y. Porter, Jr.....Key West
Captain G. M. Randall.....
Captain M. B. Swift .....Orlando
Captain Harry F. Watt .....Ocala
1st Lieut. Daniel M. Adams .....Panama City
1st Lieut. Allen M. Ames .....Pensacola
1st Lieut. C. A. Andrews .....Tampa
1st Lieut. Harold M. Beardall.....Orlando
1st Lieut. Henry P. Bevis.....Arcadia
1st Lieut. James H. Bickerstaff .....Pensacola
1st Lieut. John B. Black .....Jacksonville
1st Lieut. Everard Blackshear .....Citra
1st Lieut. Louis B. Bouchelle .....DeLand
1st Lieut. John T. Bradshaw.....San Antonio
1st Lieut. Percy H. Brigham .....Branford
1st Lieut. Herbert L. Bryans .....Pensacola
1st Lieut. B. A. Burks.....Titusville
1st Lieut. Fay A. Cameron .....Tampa
1st Lieut. Chauncey L. Chase .....Fort Dade
1st Lieut. Joseph H. Chiles .....Cleremont
1st Lieut. William A. Clark.....Pine Barren
1st Lieut. J. S. Coker.....Gardner
1st Lieut. Henry B. Cordes .....Jacksonville
1st Lieut. Charles S. Cooper.....St. Cloud
1st Lieut. Wallace P. Crigler .....Ocala
1st Lieut. T. G. Croft .....Jacksonville
1st Lieut. Clinton W. D'Alemberte .....Pensacola
1st Lieut. James S. Davidson .....Clearwater
1st Lieut. Kenneth McC. Davis.....Westbay
1st Lieut. Gaston Day .....Jacksonville
1st Lieut. L. B. Dickerson .....Clearwater
1st Lieut. George W. Dupree.....Blue Creek
1st Lieut. William T. Elmore .....Gainesville
1st Lieut. Orin O. Feaster .....Mulberry
1st Lieut. Necy L. Gachet .....Century
1st Lieut. Claude V. Gautier.....Passagrille
1st Lieut. Hugh St. C. Geiger.....Kissimmee
1st Lieut. H. M. Ginsberg .....Pensacola
1st Lieut. Paul Goss .....Mulberry
1st Lieut. O. F. Green .....Mayo
1st Lieut. John D. Griffin .....Lakeland
1st Lieut. G. H. Gwynn, Jr.....Tallahassee
1st Lieut. Humphrey Gwynn .....Tallahassee
1st Lieut. J. H. Hall.....Sopchoppy
1st Lieut. John Halliday .....Tampa
1st Lieut. Drew R. Handley .....Jacksonville
1st Lieut. MacMiller Harrison.....Palmetto
1st Lieut. John R. Hereford .....Fort Dade
1st Lieut. Frank P. Hixon .....Pensacola
1st Lieut. John C. Holley .....Pace
1st Lieut. H. F. Horne .....Jacksonville
1st Lieut. Roy Howe .....Daytona
1st Lieut. A. L. Izlar .....Ocala
1st Lieut. Edward Jelks .....Jacksonville
1st Lieut. Charles L. Jennings .....Jacksonville
1st Lieut. J. K. Johnston.....Tallahassee
1st Lieut. Charles L. Kennon.....Jacksonville
1st Lieut. William J. Lancaster.....Tampa
1st Lieut. Richard Leffers .....:.Lakeland
1st Lieut. Milford Levy.....Tallahassee
1st Lieut. John P. Long .....Lake City
1st Lieut. John W. McClane ..... St. Petersburg
1st Lieut. George S. McClellan.....Wellborn
1st Lieut. James R. McEachren.....Monticello
1st Lieut. Harry B. McEuen .....Quincy
1st Lieut. William G. McKay ..... Jacksonville
1st Lieut. Albert C. McKenzie.....Jacksonville
1st Lieut. Earle H. McRae .....Tampa
1st Lieut. H. R. Mills .....Tampa
1st Lieut. George M. Mitchell .....Jacksonville
1st Lieut. Joseph A. Mixon .....Pensacola
1st Lieut. H. P. Newman .....Bartow
1st Lieut. John A. Newnham .....Cleremont
1st Lieut. John K. Norwood .....Jacksonville
1st Lieut. Bascom H. Palmer.....Tampa
1st Lieut. Henry E. Parnell.....Fort Myers
1st Lieut. Archie R. Parrott .....Jacksonville

APPLICATION FOR APPOINTMENT
IN THE
MEDICAL RESERVE CORPS, U. S. ARMY

.....

To the SURGEON GENERAL, U. S. Army, ..., 191.....
Washington, D. C.

Sir:

I hereby make application to be examined for appointment in the Medical Reserve Corps, U. S. Army, and inclose testimonials as to my character and habits.*

I certify that to the best of my knowledge and belief I am laboring under no mental or physical infirmity or disability which can interfere with the efficient discharge of any duty which may be required of me if appointed in the Medical Reserve Corps, U. S. Army, and that the answers given to the interrogatories below are true and correct in every respect.

I furthermore state my willingness to proceed to such point for examination as may be designated by the Surgeon General, with the understanding that the journey entailed thereby must be made at my own expense.

INTERROGATORIES.

1. What is your name in full (including your full middle name)?.....
.....
2. What was the date of your birth?.....
3. Where were you born? (Give State and city or county; if foreign born, give country.....
.....
4. When and where were you naturalized? (For applicants of alien birth only.).....
.....
5. Are you married or single?..... 6. Have you any minor children; if so, how many?.....
7. What is your height, in inches?..... 8. Your weight, in pounds?.....
9. Give the nature and dates of all serious sicknesses and injuries which you have suffered?.....
.....
10. If either parent or brother or sister has died, state cause and age in each case:.....
.....
11. Do you use intoxicating liquors or narcotics; if so, to what extent?.....
12. Have you found your health or habits to interfere with your success in civil life?.....
13. What academy, high school, college, or university have you attended? State periods of attendance from year to year, and whether you were graduated, giving date or dates of graduation:
.....
.....
14. Name any other educational advantages you have had, such as private tuition, foreign travel, etc.:
.....
15. Give all literary or scientific degrees you have taken, if any, names of institutions granting them, and dates:.....
.....
16. With what ancient or modern languages or branches of science are you acquainted?.....
.....

*Testimonials as to character and habits from at least two reputable persons must accompany this application. Political recommendations are not necessary.

17. How many courses of lectures have you attended?..... Names of colleges and dates:
.....

18. When and where were you graduated in medicine? .....

19. Have you been before a State examining board? If so, state when, where and with what result: * .....

20. Are you a member of any State medical society? If so, give its name:.....
.....

21. Have you had service in a hospital? If so, state where and in what capacity, giving inclusive dates of each kind of service:.....
.....

22. What clinical experience have you had in dispensary or private practice?.....

23. Have you paid particular attention to any specialty in medicine; if so, what branch?.....

24. What opportunities for instruction or practice in operative surgery have you had?.....
.....

25. Have you previously been an applicant for entry into the United States service? If so, state when, where, and with what result (if rejected state why): .....
.....

26. Are you a member of the organized militia? If so, state with what organization and in what capacity: .....

27. Have you been in the military or naval service of the United States as cadet or otherwise? If so, give inclusive dates of service with each organization, designating it:.....
.....

28. What occupation, if any, have you followed other than that of student or practitioner?.....
.....

29. What is your present post-office address?.....

30. What is your permanent residence?.....

31. (Signature of applicant.).....

32. The correctness of all the statements made above was subscribed and sworn to by the applicant before me this.....day of....., 191.....

.....

.....

*This application must be accompanied by a certificate from the proper official that the applicant is duly registered to practice medicine in the State in which he resides.

FORM 149
W. D., S. G. O.
(Revised May 3, 1917)

APPLICATION FOR EXAMINATION FOR APPOINTMENT IN THE MEDICAL RESERVE CORPS, U. S. ARMY.

.....Inclosures.

1st Lieut. James L. Pennington.....Fountain
1st Lieut. J. O. Philips .....Worthington Springs
1st Lieut. William H. Pickett.....Gainesville
1st Lieut. Harper L. Proctor .....Jacksonville
1st Lieut. Marion E. Quina .....Pensacola
1st Lieut. Shaler A. Richardson .....Jacksonville
1st Lieut. Dwight M. Rivers.....Lake City
1st Lieut. E. T. Sellers .....Jacksonville
1st Lieut. George W. Sherouse .....Campville
1st Lieut. E. E. Strickland .....Miccosukie
1st Lieut. Baldwin S. Stutts .....Port St. Joe
1st Lieut. G. C. Tillman .....Gainesville
1st Lieut. W. J. Vinson .....Tarpon Springs
1st Lieut. Harry C. VonDahm.....Jacksonville
1st Lieut. Adam C. Walkup .....McIntosh
1st Lieut. Archie Watson .....Live Oak
1st Lieut. B. L. Whitten .....Fort Pierce
1st Lieut. John M. Whitfield .....Malone
1st Lieut. William E. Whitlock.....Fort White
1st Lieut. Charlton C. Whittle .....Nocatee
1st Lieut. Daniel B. Williams .....Lake City
1st Lieut. Albert H. Wilkinson.....Jacksonville

THE NAVY.

Passed Assistant Surgeon W. P. Dey..Jacksonville
Assistant Surgeon Thomas S. Field....Jacksonville
Assistant Surgeon Boyd Gilbert.....Pensacola
Assistant Surgeon R. P. Henderson.....Tampa
Passed Asst. Surgeon J. Knox Simpson, Jacksonville
Assistant Surgeon D. C. Thompson.....Pensacola

NATIONAL GUARD UNITED STATES (FLA.).

Major Lorin Green .....Jacksonville
Major Ralph Green .....Jacksonville
Major James H. Livingston .....Jacksonville
Captain W. J. Buck .....Gainesville
1st Lieut. Daniel C. Campbell.....Marianna
1st Lieut. John R. Hawkins .....Williston
1st Lieut. Z. V. Johnson .....Milton
1st Lieut. J. M. Mitchell .....Millville

MANIFEST PULMONARY TUBERCULOSIS.

G. E. Bushnell, Colonel, United States Army, Retired, publishes an article in the *American Review of Tuberculosis,* for May, on the diagnosis and prognosis of cases of tuberculosis in which there is no question of the existence of the disease. For the sake of aiding the inexperienced and of avoiding confusing qualifications the statements are kept as simple as possible and those points stressed which should be particularly borne in mind in the study of the tuberculosis lesion.

Fibrosis: With tuberculous infiltration and absorption of the products of the focus, the body tissues gain a new reactivity. If the absorption is not too great they are able to combat the infection and scar tissue is formed about the focus. Fibrosis may be very extensive and even involve a whole lung. It may be looked upon as evidence of a long standing lesion and of immunity of the individual. The encapsulation is not an absolute mechanical barrier, however, as evidenced by the reactivation of ancient foci in cachectic conditions.

Caseation: Caseous foci produce a wet lesion. They may be surrounded by dense fibrous tissue.

Breath Sounds: Observation of the breath sounds must be correlated with that of the patient's general condition, lest unjustifiably favorable conclusions be drawn.

Rales: The various kinds of rales and their relation to different pathological conditions are taken up in detail. Rales constitute the auscultatory evidence of inflammatory reaction to the poisons of the tubercle and are the best evidence that the lesion is resisting its focus.

Symptoms: These should be considered in conjunction with the rales. Continued observation is necessary to a final determination of the condition of the patient.

Topical Diagnosis: Civilized man has a partial immunity against tuberculosis. In about 70 per cent the disease is never recognized clinically and in the remaining 30 per cent it appears in forms not characteristic of primary tuberculosis. It is due to a temporary or permanent, complete or partial loss of immunity.

Normal Apex: Observation here excludes well-marked chronic disease of the upper lung but it does not exclude acute forms.

Apical Tuberculosis: In the more resistant cases the first manifestation is in the apex. Progressively less resistant are the forms in which the initial foci coalesce into one or more large foci which may become encapsulated or lead to cavitation—more properly denominated tuberculosis of the upper lobe. Apical lesions in the strict sense are of importance in diagnosis only as respects the decision as to whether a lesion is present at all. From the fact that the apical lesion is usually found in an arrested state it is often not recognized and the latter extensions lower

downward in the upper lobe are taken to be the first of the superficial lesions.

Upper Lobe Lesions: Often the tuberculous lesion of the upper lobe has consisted in the deposition of a few tubercles which remain discreet, become fibrous or calcified, or if small disappear entirely and the existence of a lesion is to be determined solely by the signs which point to diffuse thickening of the connective tissue framework. Where pneumonia occurs the lesion usually presents itself as a chronic one. Less chronic and less indurated small lesions of the upper lobe are detected with greater difficulty. There is as much difference in the severity of even arrested lesions as exists between a scorch of the skin and a third degree burn.

Bilateral Type of Peribronchial Tuberculosis: In this type there is fibroid induration and thickening along the normal course of the bronchi and blood vessels, the induration extending well into the lower lung on each side. In some cases the X-ray shadows are massive and the course of the tubes and vessels no longer apparent. There has been a strong reaction to the presence of widely spread tubercle bacilli and bacillary poisons. The disseminated tubercles may have become calcified or fibrous at the time of examination and therefore probably not likely to be of harm or they may be a source of great danger.

Acute Peribronchial Tuberculosis: This is apt to occur on the hitherto healthy side opposite an old and apparently nearly or quite healed lesion. The masses of tubercle are so thickly grouped about the bronchi that the process progresses toward the lumen of the bronchus, with or without actual perforation. There is incessant cough without results which generally terminate in vomiting. Morphine may be helpful for a while but the patient is speedily worn out.

Large Sluggish Lesions: The most salient characteristic of a lesion of this class is its development according to law — terminated by the immunity of the individual and the relative mobility of the part. Hence we expect cavities and fibrous tissue at the summit followed by progressively smaller and more numerous lesions as the mobility of the lung increases downward and the lapses of immunity become more serious. In another class of lesion two types are distinguished. The first consists essentially in a disseminated fibrosis which from its nature does not give very sharply marked signs. The second class of cases is found among patients which have been under favorable conditions but have been slowly retrogressing. Here the difficulties of diagnosis are largely due to the presence of extensive plastic exudates which act in various ways to obscure the physical signs.

There is one class apparently similar to those just described which presents great difficulty in diagnosis and prognosis where there is all the evidence of advanced disease but the patient's general health is good. The determination of such a case is made by the disassociation of signs and symptoms. Here as in all advanced cases, symptoms furnish the surest clue to the prognosis.

The Cavity: A cavity may be superficial or deep, open or closed. If surrounded by air containing lung substance the signs may be much obscured, whereas in the more usual form in which the wall is little more than the two adherent layers of the pleura firmly adherent to the ribs the cavity sounds are conducted with startling distinctness. A large cavity is always more or less a wet cavity. Small cavities are difficult of diagnosis. A closed cavity gives no certain physical signs. A full cavity, equivalent to an abscess may be suspected if its location and weight are such as to pull upon the pleura and cause the characteristic "pleural" reflex cough. A deep cavity presents some difficulties of diagnosis. A variety of this is the serpiginous cavity, a narrow sinuous tube extending far down into the lung. With the extending downward cavitation hemorrhage is likely to ensue, the blood is difficult to raise and for the greater part infiltrates the surrounding lung causing cyanosis and death.

The Large Superficial Lesion: Typically this lesion is made up of a cavity surrounded

by abundant fibrous tissue above, below this a few large isolated tubercles, still farther down numerous small tubercles. It represents at once three stages of development and denotes a progress of years. The prognosis depends upon the kind and number of rales in the lower parts of the lesion and whether or not there is evidence there of circumscription of the process from the presence of fibrous tissue. A lesion of this kind should be studied to determine the relative age of its parts and the topographical distribution of caseous and fibrous tissue.

Peribronchial Extension in the Same Lung: In the upper lobe the force of inspiration is directed toward the ribs and tuberculous lesions are most marked or only existent near the surface of the lung. But in the lower chest the movements of the diaphragm have more influence upon the lymph supply and the invasion is directed downward. The active motion of the expansile base does not, however, permit the establishment of tuberculous foci unless active motion is prevented by pleural adhesions. Extensions in the lower lobe are apt to involve the entire course of the bronchus. What we judge of as superficial extensions of but slight extent are here really the outward manifestation of a very considerable process, the greater part of which runs its course in the deep lung.

Lesions of the Other Lung: All pulmonary tuberculosis is essentially bilateral, so far at least as the deep lung is concerned. As a rule lesions of the lung secondarily involved are larger and more acute than those of the side first affected. If a patient with an arrested lesion presents signs of constitutional impairment especial care should be taken to examine the opposite side.

Miliary Tuberculosis: A better name would be disseminated hæmatogenous tuberculosis and it should be reserved for cases in which there is a large or a universal dissemination often from an old and apparently insignificant focus of minute tubercles which constitute the principal disease. The point upon which especial emphasis should be laid is, that the initial condition which is the real cause of miliary tuberculosis is the complete failure of immunity which allows collections of tubercle bacilli to be set free and to establish everywhere new colonies. The dissemination may be sparse or dense. Their characteristic feature is their irregularity of dissemination.—*Bushnell, George E.: Manifest Pulmonary Tuberculosis, Am. Rev. Tub., 1918, Vol. 2, No. 3.*

VOCATIONAL REHABILITATION OF THE DISABLED SOLDIER.

The Journal has frequently stated that the most important future work connected with the war is the rehabilitation and placement in a vocation of the disabled. It has stated that this work properly should come under the supervision and direction of the Surgeon-General of the Army or the Navy, as the case might be. Recently Senator Smith of Georgia introduced a bill which looked to the transference of some of this work to the Federal Board for Vocational Education. According to the original bill, this work, while theoretically under the supervision of the Surgeon-General, would in reality have been under the supervision of this Federal Board. This, of course, would have been a serious handicap to good work. As the bill passed the Senate, it was so modified as to make the measure a fairly satisfactory one. It must be recognized that an entire program which shall deal with the disabled soldier in an effective way must involve his medical and surgical treatment, whatever reeducation may be necessary, and his final placement or after-care. While the Surgeon-General of the Army had facilities to do all of this work, and, in fact, had worked out a program, other federal agencies also were prepared to do part of the work supplementary to the medical and surgical treatment. The bill leaves the soldier, or sailor, under the entire authority of the War Department or Navy Department—that is, in the Medical Department of the Army or Navy—until discharged from the service. The Surgeon-General may deal with the soldier in an attempt to cure him, or as

nearly so as the man's disabilities permit, without outside interference. The bill provides that no "vocational teaching shall be carried on in any of the hospitals until the medical authorities certify that the condition of the patient is such as to justify such teaching"; also that "the plan may be established between the War and the Navy Department and the Federal Board for vocational education whereby these departments will act in an advisory capacity with the board in the care of the health of the soldier after his discharge." Necessarily, if the program as outlined by the bill is to be carried out in a satisfactory manner, there must be hearty cooperation between the Federal Board and the Surgeon-Generals of the Army and of the Navy. There is no reason to suppose that this cooperation will not be entered into fully by these different interests, and to the ultimate, best advantage of the disabled soldier. —*Jour. A. M. A.*

THE PEORIA OUTBREAK.

It is disappointing to find that widespread epidemics due to a sewage-contaminated water supply still occur with relative frequency in large and civilized communities. Peoria is the third large Illinois city to suffer from a visitation of this sort within a few years, similar outbreaks having occurred at Rockford and Quincy a few years ago. In the last named cities the outbreak was clearly traced to the water supply, and the circumstances leading up to the occurrence were fully investigated. In both Rockford and Quincy the outbreak of gastro-intestinal disease was followed by one of typhoid fever. It is yet too early to learn whether Peoria will be afflicted in like manner, but the health authorities in that city must be awaiting developments with anxiety. In the majority of such outbreaks everywhere typhoid with its relatively long period of incubation has been a sequel to the more sudden and more extensive as well as more transient epidemic of gastro-enteritis.

Owing to the fact that no complete investigation and report on the Peoria situation have yet been made by the local authorities, we are not in a position to state exactly how the water contamination occurred. The fact that the water company is privately owned may perhaps explain in part the difficulties of carrying through a complete investigation. It can hardly be believed, however, that the Peoria authorities will allow the matter to rest here, particularly with the shadow of a possible typhoid epidemic hanging over them. The citizens of Peoria will doubtless demand that a searching inquiry be made, and that so far as practicable the conditions at the water works and the circumstances preceding the outbreak be brought to light.

The state of Illinois has for some years maintained an expert staff and excellent facilities for water examination in connection with the State Water Survey, with headquarters at the University of Illinois. There is also a well organized Illinois Water Supply Association, with membership composed of the various water works superintendents and other officials. It is somewhat singular that three of the most serious outbreaks of water-borne disease that have occurred in this country should have occurred in this state. Both the Rockford and the Quincy epidemics were due to something approaching mismanagement of the water supply systems, and from the information furnished in the report of our special investigator published last week it may be conjectured that the Peoria outbreak may have been due to some form of carelessness or negligence on the part of the responsible authorities.

It is somewhat surprising that in a city the size of Peoria an efficient municipal health organization should not be provided. We understand that the Peoria health officer is not a full-time appointee, and that no systematic oversight of the bacterial condition of the water supply has been practiced. In Peoria as in many other cities there have doubtless been some unsettling changes in the office of the health commissioner, as a

result of the shifting of personnel necessitated by the war; but the health of a thriving city is too important to be jeopardized in this way except in dire need. There seems little doubt that Peoria, like many other cities of its class, is mistaken in supposing that the health work of the city can be properly administered with part-time service and with insufficient staff and appropriations. There is a kind of efficiency just as necessary at this time in civil life as in the military camps. If Peoria reaps an aftermath of typhoid with its roll of deaths, the appeal to the imagination of the average citizen may be greater than if no further development takes place; but the outbreak, as we now know about it, must be sufficiently impressive to the responsible authorities. In public health affairs, eternal vigilance is the price of safety.—*Journal A. M. A.*, March 9, 1918.

THE ILLEGITIMATE BABY'S RIGHTS.

The rights of illegitimate children and the state's responsibility for seeing that every child, no matter what his parentage, has the nurture, protection, and education essential to his usefulness as a citizen are for the first time given complete national recognition in the Norwegian laws concerning illegitimate children, according to a report issued today by the Children's Bureau of the U. S. Department of Labor.

These laws make the state instead of the mother responsible for establishing paternity. The state holds both parents equally and continuously responsible for the illegitimate child—"The child shall be entitled to bringing up, maintenance, training, and education, from both its father and its mother." The report contains a translation of the several Norwegian laws, with amendments, on illegitimate children and their care. A history of the efforts through which the legislation was secured is given in the introduction.

The attitude which looks upon illegitimacy as a child-welfare problem that must be solved for the sake of the child and of the state is exemplified by this Norwegian legislation. In connection with its studies of the bearing of the war upon child-welfare the Children's Bureau examined the evidence obtainable, but could not find that it justified the statements that have been circulated of widespread increase in illegitimacy since the war. The Bureau believes, however, that the needs of the illegitimate child must be considered in the Children's Year campaign "to save 100,000 children's lives during the second year of the war and to get a square deal for children."

NEW AND NONOFFICIAL REMEDIES.

CHLORCOSANE. — A liquid, chlorinated paraffin, containing its chlorine in stable (non-active) combination. It is used as a solvent for dichloramine-T and is itself without therapeutic action.

CHLORCOSANE-CALCO.—A brand of chlorcosane containing from 31 to 35 per cent of combined chlorine. The Calco Chemical Co., Bound Brook, N. J.

CHLORCOSANE-MONSANTO. — A brand of chlorcosane containing from 27 to 30 per cent of combined chlorine. Monsanto Chemical Co., St. Louis, Mo. (*Jour. A. M. A.*, May 18, 1918, p. 1459.)

Geo. W. Brady & Co.: Barium Suphate-Brady for Roentgen-Ray Work.

Johnson and Johnson: Chlorine-Soda Ampoules.

Lederle Antitoxin Laboratories: Antipneumococcic Serum, Type I.

Monsanto Chemical Works: Chlorcosane-Monsanto.

Morgenstern & Company: Acid Phenylcinch.-Morgenstern; Acid Phenylcinch.-Morgenstern Tablets; Sodium Phenylcinch.-Water-Morgenstern.

Parke, Davis & Company: Antipneumococcic Serum, Type I.

Rector Chemical Company, Inc.: Procaine-Rector.

E. R. Squibb and Sons: Antipneumococcic Serum, Type I.

Publisher's Notes

PROCAINE AND NOVOCAINE IDENTICAL.

To the Editor:

It appears that in certain quarters the attitude is taken that the local anesthetic sold as Procaine is not identical with that marketed as Novocaine. The Subcommittee on Synthetic Drugs of the National Research Council believes it important that this misunderstanding should be corrected and hence offers the following explanation:

The monohydrochloride of para-aminobenzoyldiethyl-amino-ethanol, which was formerly made in Germany by the Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst A. M., and sold under the trademarked name Novocaine, is now manufactured in the United States. Under the provisions of the Trading with the Enemy Act, the Federal Trade Commission has taken over the patent that gave monopoly for the manufacture and sale of the local anesthetic to the German corporation, and has issued licenses to American concerns for the manufacture of the product. This license makes it a condition that the product first introduced under the proprietary name "Novocaine" shall be called Procaine, and that it shall in every way be the same as the article formerly obtained from Germany. To insure this identity with the German Novocaine, the Federal Trade Commission has submitted the product of each firm licensed to the A. M. A. Chemical Laboratory to establish its chemical identity and purity, and to the Cornell pharmacologist, Dr. R. A. Hatcher, to determine that it was not unduly toxic.

So far, the following firms have been licensed to manufacture and sell Procaine:

The Abbott Laboratories, Ravenswood, Chicago.

Farbwerke-Hoechst Company, New York, N. Y.

Rector Chemical Co., Inc., New York, N. Y.

Calco Chemical Company, Bound Brook, N. J.

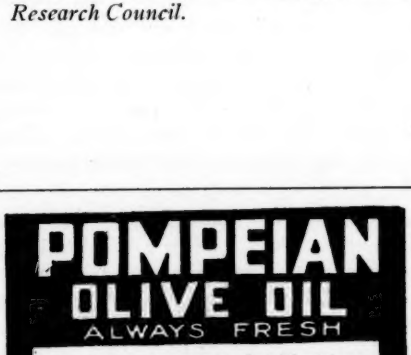
Of these, the first three firms are offering their products for sale at this time, and have secured their admission to New and Nonofficial Remedies as brands of Procaine which comply with the New and Nonofficial Remedies standards.

While all firms are required to sell their product under the official name "Procaine," the Farbwerke-Hoechst Company is permitted to use the trade designation "Novocaine" in addition, since it holds the right to this designation by virtue of trademark registration.

In conclusion: Procaine is identical with the substance first introduced as Novocaine. In the interest of rational nomenclature, the first term should be used in prescriptions and scientific contributions. If it is deemed necessary to designate the product of a particular firm, this may be done by writing Procaine-Abbott, Procaine-Rector, or Procaine-Farbwerke (or Procaine-Novocaine brand).

Yours truly,

JULIUS STIEGLITZ, *Chairman*
Subcommittee on Synthetic Drugs, National Research Council.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